



Fort Hood Net-Zero Waste Update



2020 "Perfect Vision, Perfect Mission"





Net Zero Waste History



NET ZERO HIERARCHY

ENERGY **PILOT INSTALLATIONS**

The Army Net Zero approach addresses energy, water and waste at Army installations and is comprised of five interrelated steps:

- Reduction includes maximizing energy efficiency in existing facilities, implementing water conservation practices, and eliminating generation of unnecessary waste.
- Re-purpose involves diverting energy, water or waste to a secondary purpose with limited processes.
- Recycling or composting involves management of the solid waste stream, development of closed loop systems to reclaim water, or cogeneration where two forms of energy (heat and electricity) are created from one source.
- Energy recovery can occur from converting unusable waste to energy, renewable energy or geothermal water sources.
- Disposal is the final step and last resort after the last drop of water, the last bit of thermal energy and all other waste mitigation strategies have been fully exercised.

The Net Zero Energy goal is to produce as much energy on the installation as it uses, over the course of a year.

The Net Zero Water goal is to limit use of potable fresh water and capture, re-purpose or recharge an amount of water equal to or greater than the amount of water the installation consumes.

The Net Zero Waste goal requires considering the waste stream when purchasing items, reducing the volume of packaging, reusing as much as possible, and recycling the rest.

NET ZERO ENERGY

- Fort Bliss, TX*
- Fort Carson, CO*
- Fort Detrick, MD
- Fort Hunter Liggett, CA
- Kwajalein Atol, RMI
- Parks Reserve Forces TA, CA
- Sierra Army Depot, CA
- West Point, NY

NET ZERO WATER

- Aberdeen Proving Ground, MD
- Camp Rilea, OR
- Fort Bliss, TX*
- Fort Buchanan, PR
- Fort Carson, CO*
- Fort Riley, KS
- JB Lewis-McChord, WA
- Tobyhanna Army Depot, PA

NET ZERO WASTE

- Fort Bliss, TX*
- Fort Carson, CO*
- Fort Detrick, MD
- Fort Hood, TX
- Fort Hunter Liggett, CA
- Fort Polk, LA
- JB Lewis-McChord, WA
- USAG Grafenwoehr, Germany

**Identified as Net Zero Pilot Installations (Energy, Water and Waste)*

Net Zero is a Force Multiplier

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U.S. ARMY

- April 2011 selected as NZW Pilot
- December 2011 NZW Kickoff Workshop
- 4 Goal Leader Workgroup Monthly Meetings
- January 2013 2nd Annual Workshop
- Monthly Recycle Coordinator Meetings

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Net Zero Waste Strategy



Goal: Change culture at Fort Hood to achieve NZW

Key Tasks:

- **Reduce** amount of solid waste generated
- **Re-purpose** whenever possible
- **Expand Recycle**; increase diversion rate
- **Use Waste to Energy** to eliminate remaining waste
- Identify alternative disposal methods
- Employ **aggressive strategic communications** campaign
- Utilize Net Zero Waste Workgroups and Annual Workshops



End State: Fort Hood Community has embraced NZW and is actively supporting the effort



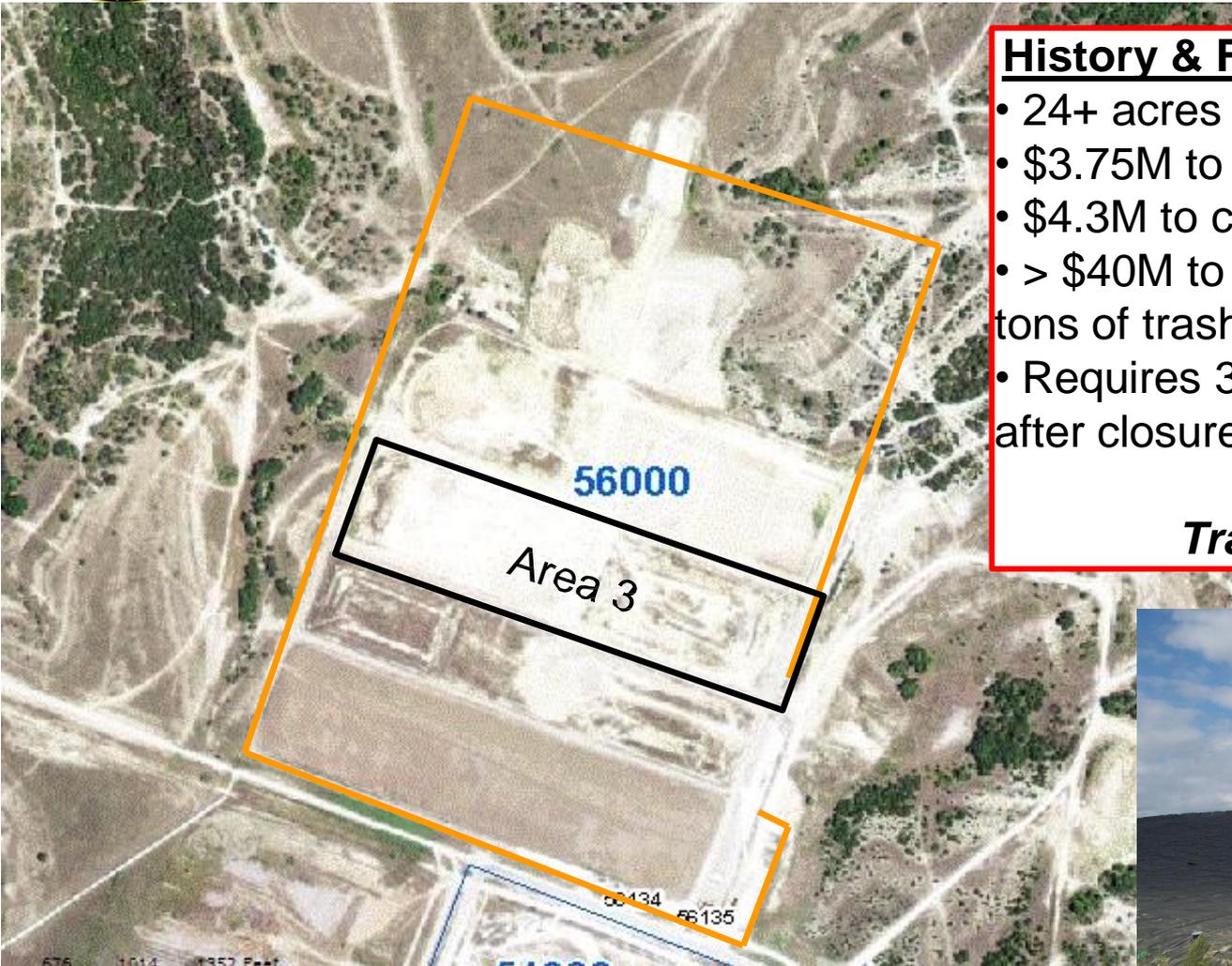
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Fort Hood Landfill: Area 3 Closure



History & Facts

- 24+ acres (19 football fields)
- \$3.75M to construct (6 cells)
- \$4.3M to close (on-going)
- > \$40M to collect and dump 325K tons of trash from 2001-2013
- Requires 30 years of monitoring after closure

Trash is Expensive!



UNCLASSIFIED

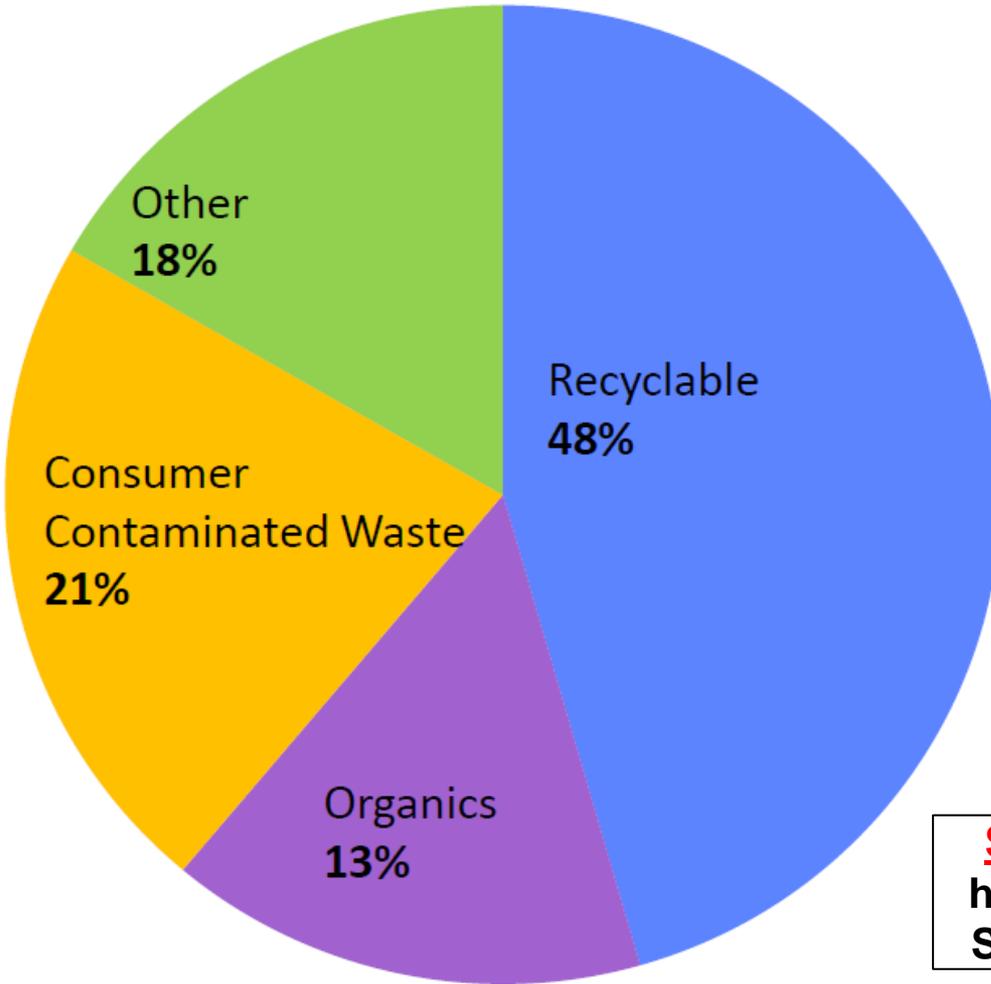
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What goes into the landfill?



Convert food packaging and paper towels to compostable items so ~2,500 tons could be composted



In FY13, **8,668** tons of recyclables in the landfill!



\$1,036,240 could have gone back to Soldier Unit funds

~2,300 tons per year of potential organics could be composted



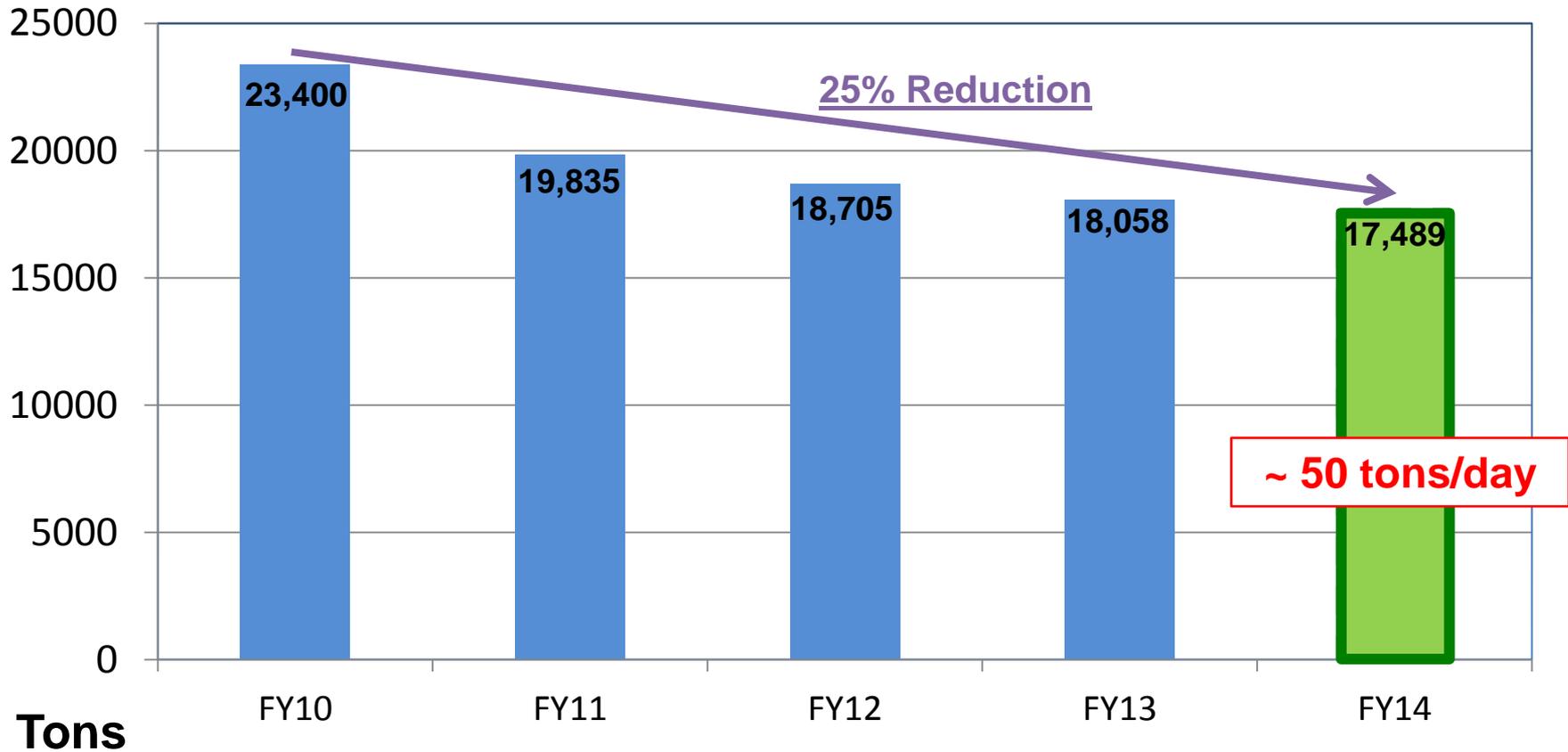
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MSW to the Fort Hood Landfill



Does not include C&D

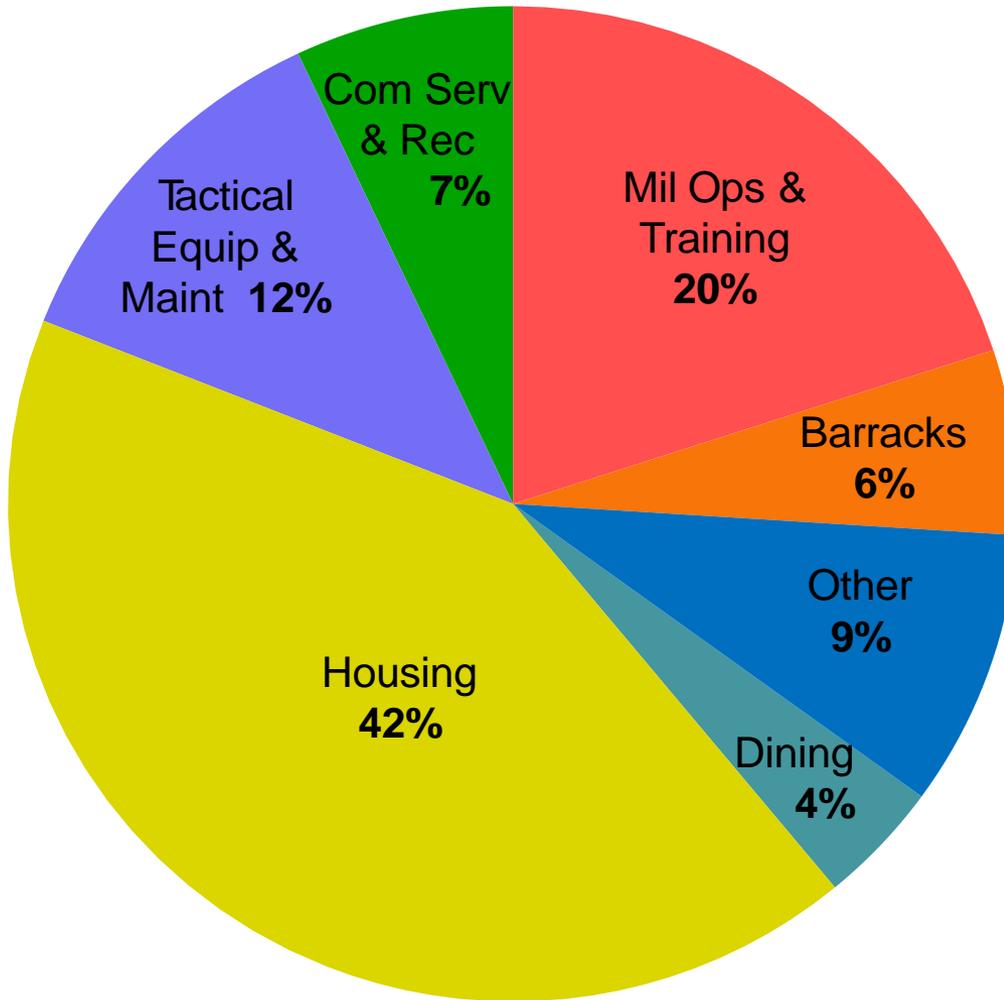


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Where does our Waste Come From?



- Mil Ops & Training - 3741 tons
- Barracks - 1122 tons
- Other - 1684 tons (Retail, Admin, Hospital)
- Dining - 748 tons
- Housing - 7856 tons
- Tactical Equip & Maint - 2245 tons
- Com Services & Rec - 1309 tons



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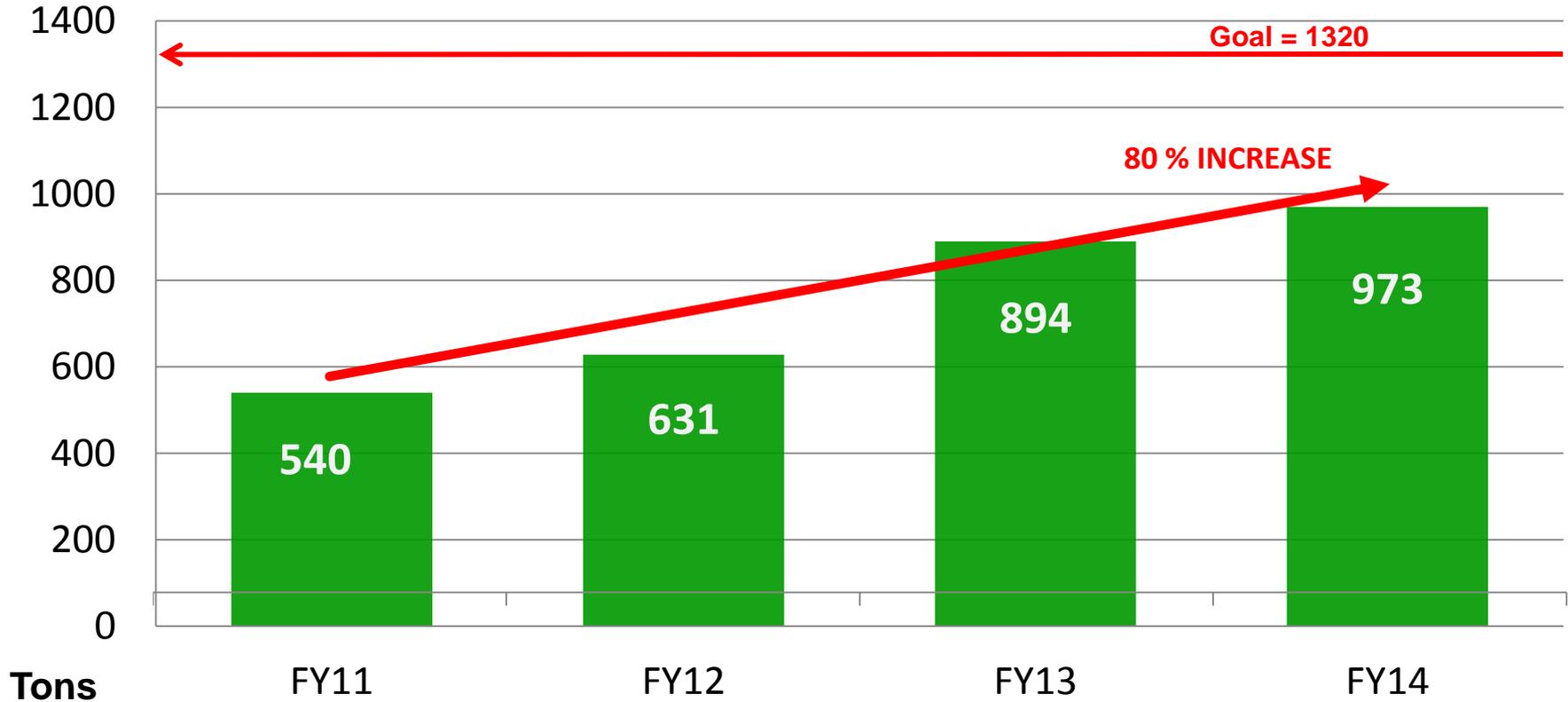




FY14 Housing Recycle



FY Totals



*Liberty Village has 35-gallon containers all other villages have 96-gallon containers.



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NZW Accomplishments



- 96 gallon single stream recycling in housing areas
- Scales on recycle trucks to measure progress
- Monthly progress reports for all housing villages
- Food Waste Composting Feasibility Study
- Spring and Fall Installation-wide Yard Sales
- Increased types of materials that can be recycled:
 - Glass, e-waste, tires, hard drives, Christmas lights, styrofoam & bags
- Commissary food waste donations to local pig farmers
- Furniture donations to local charities
- Commander desk side briefs with Recycle Coordinators
- Zero Boot Print Challenge for Soldiers
- Installation-wide NZW Communication Campaign





Net Zero Waste Diversion Glide Path



2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020

Diversion Goal

40% 42% 45% 50% 55% 60% 65% 70% 75% 80% 85%

Actual Diversion

42% 39% 44% 48% 49%

Diversion efforts include

Recycling

Composting

Reuse



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